

## CLAIMS

What is claimed is:

1. A propulsion system comprising:  
a first gear;  
a second gear;  
a gas turbine engine pivotally mounted along a pivot axis; and  
an input gear driven by said gas turbine engine, said input gear engaged with said first gear and said second gear.
2. The propulsion system as recited in claim 1, wherein said first gear and said second gear engage an output gear.
3. The propulsion system as recited in claim 2, wherein said output gear drives an output shaft.
4. The propulsion system as recited in claim 1, wherein said pivot axis passing through a center of gravity of said gas turbine engine.
5. The propulsion system as recited in claim 1, wherein said first gear defines a first axis of rotation, said second gear defines a second axis of rotation and said input gear defines a gear axis of rotation, said first, second and input axis of rotation transverse said pivot axis.
6. The propulsion system as recited in claim 5, wherein said pivot axis and said gear axis are contained within a common plane.
7. The propulsion system as recited in claim 1, further comprising a gearbox assembly which contains said first gear, said second gear and said input gear.

8. The propulsion system as recited in claim 7, further comprising a support structure which mounts said gas turbine engine to said gearbox assembly.

9. The propulsion system as recited in claim 1, wherein said first gear and said second gear engage an output gear, said output gear driving a first shaft and a second shaft, said first shaft drives a translational propulsion system and said second shaft drives a rotor system.

10. A hybrid unmanned aerial vehicle comprising:  
a fuselage defining a duct;  
a coaxial transmission driving a counter-rotating rotor system within said duct;  
a gas turbine engine pivotally mounted along a pivot axis, said pivot axis passing  
through a center of gravity of said gas turbine engine;  
an input gear driven by said gas turbine engine, said input gear engaged with a  
first gear and a second gear;  
an output gear engaged with said first gear and said second gear;  
a first shaft driven by said output gear, said first shaft driving a translational  
propulsion system; and  
a second shaft driven by said output gear, said second shaft driving said coaxial  
transmission.

11. The hybrid unmanned aerial vehicle as recited in claim 10, wherein said first gear  
defines a first axis of rotation, said second gear defines a second axis of rotation and said input  
gear defines a gear axis of rotation, said first, second and gear axis of rotation transverse the  
pivot axis.

12. The hybrid unmanned aerial vehicle as recited in claim 11, wherein said pivot axis  
and said gear axis are contained within a common plane.

13. A method of splitting torque from a gas turbine engine comprising the steps of:
  - (1) pivotally mounting a gas turbine engine along a pivot axis;
  - (2) driving an input gear with the gas turbine engine; and
  - (3) engaging the input gear with a first gear and a second gear.
14. A method as recited in claim 13, further comprising the step of:  
driving an output gear with the first and second gear.
15. A method as recited in claim 13, wherein said step (2) further comprises the step  
of:  
mounting the input gear directly to a shaft of the gas turbine engine.
16. A method as recited in claim 13, further comprising the steps of:  
locating a first axis of rotation of the first gear transverse the pivot axis;  
locating a second axis of rotation of the second gear transverse the pivot axis;  
locating a gear axis of rotation of the input gear transverse the pivot axis;
17. A method as recited in claim 16, further comprising the step of:  
locating the pivot axis and the gear axis within a common plane.
18. A method as recited in claim 13, wherein said step (1) further comprises the step  
of:  
locating the pivot axis through a center of gravity of the gas turbine engine.